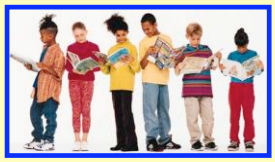
Defensible Differentiation: What Would it Take to Get it Right?



Learning Network NZ
Christchurch, NZ
June, 2009

Carol Ann Tomlinson
William Clay Parrish, Jr. Professor
Curry School of Education
University of Virginia
<cat3y@virginia.edu>

Teacher of 5-7 Admin

Teacher of 8-10 Admin

Teacher of 11-13 Admin

Teacher of 14-18 Admin

Specialists/Supervisors
Professors

Where are you in the journey?

Uninitiated Traveler

Occasional Traveler

Seasoned Traveler

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The Purpose of the Sessions…

To help you develop a framework for thinking about differentiation in a coherent way.
To provide a "big picture" of what differentiation is.
To engage you in thinking about the key principles or big ideas of differentiation in order to ensure defensible translation of DI into your schools & classrooms.
To provide you with a common place to think together and ask questions.

As a result of the two sessions, you should:

KNOW
Key principles (non-negotiables) of differentiation
Key Vocabulary: readiness, interest, learning profile, content, process, product, pre-assessment, on-going/formative assessment, flexible grouping, "teaching up," respectful tasks

UNDERSTAND
Effective differentiation stems from a teacher's growth mindset.
A growth mindset opens the way teacher-student connections and community.
Student learning differences shape student learning experiences.
Instructional fit is necessary for real learning.
Curriculum, instruction, and assessment form a system with interdependent parts.
Defensible differentiation is proactive in its response to both student needs and content requirements.
Quality differentiation stretches learners.

BE ABLE TO
Analyze examples of differentiation for indicators of quality appropriately using key vocabulary of differentiation and key principles of differentiation
Relate principles and practices of differentiation to your experiences

In Contemporary Classrooms…

We have:
More students speaking more languages than ever before
Increasing numbers of students identified with learning problems
More students who need assistance with reading and writing
Many advanced learners who need to continue their growth
A growing economic divide reflected in and aggravated by segregated classes
A need for virtually all students to leave school as thinkers, flexible and independent learners, and producers of knowledge

And:
We live in a rapidly shrinking and interdependent world where our divisions are increasingly a threat to both security and economy.

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In spite of the great & growing variety of students in our classrooms…

We still teach as though

they are essentially alike!

A large body of research is clear that students:

- Learn at different rates
- Need different degrees of difficulty
- Have different interests
- Learn in different ways
- And need different support systems…

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Teaching a room full of learners
The same thing
In the same way
Over the same time span
With the same supports
And expecting good results
Has never happened
And it never will.

To what degree is standardized teaching alive & well in your school?

How standardized are your students?

What evidence suggests that standardized teaching does ***not*** work well for a notable segment of students?

What is Differentiation?
(Making Sure We're on the Same Page…)

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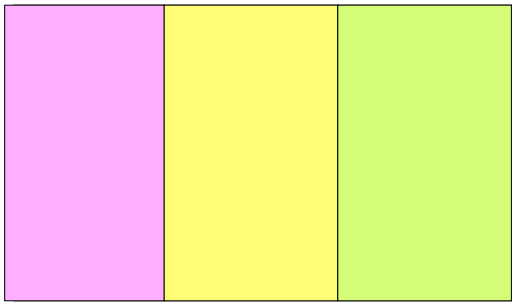
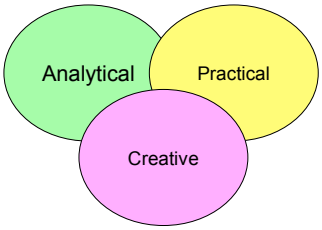
SHHHH/SHARE…

1. Pick a column
2. Write or think silently
3. Be ready to share when time is called



Sternberg's Three Intelligences



Biology – A Differentiated Lesson Using Sternberg's Intelligences

Learning Goals:

Know - Names of cell parts, functions of cell parts
Understand - A cell is a system with interrelated parts
Do – Analyze the interrelationships of cell parts/functions
Present understandings in a clear, useful, interesting and fresh way.

After whole class study of a cell, students choose one of the following sense-making activities.

Analytical: Use a cause/effect chain or some other format you develop to show how each part of a cell affects other parts as well as the whole. Use labels, directional markers, and other symbols as appropriate to ensure that someone who is pretty clueless about how a cell works will be enlightened after they study your work.

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Sternberg/Biology (cont'd)

Practical: Look around you in your world or the broader world for systems that could serve as analogies for the cell.

Select your best analogy ("best" most clearly matched, most explanatory or enlightening).

Devise a way to make the analogy clear and visible to an audience of peers, ensuring that they will develop clearer and richer insights about how a cell works by sharing in your work.

Be sure to emphasize both the individual functions of cell parts and the interrelationships among the parts.

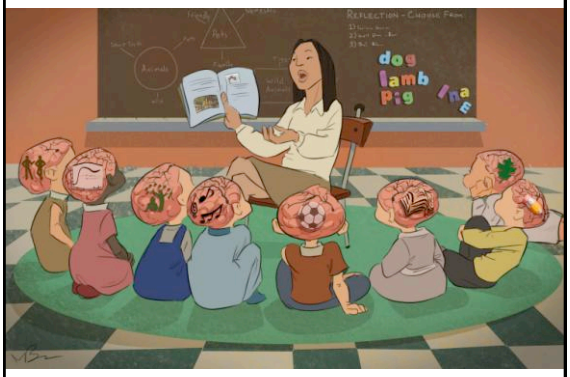
Sternberg/Biology (cont'd)

Creative: Use unlikely stuff to depict the structure and function of the cell, with emphasis on interrelationships among each of the parts. You should select your materials carefully to reveal something important about the cell, it's parts, and their interrelationships your ahas should trigger ours.

or

Tell a story that helps us understand a cell as a system with interdependent actors or characters, a plot to carry out, a setting, and even a potential conflict. Use your own imagination and narrative preferences to help us gain insights into this remarkable system. Students share their work in a 3 format – first triads of students who completed the same option, then triads with each of the 3 categories represented.

This is then followed by a teacher-led, whole class discussion of cells as systems, then a "Teacher Challenge" in which the teacher asks students to make analogies or other sorts of comparisons between cells, cell parts, or interrelationships and objects, photos, or examples produced by the teacher.



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At its most basic level, differentiating instruction means "*shaking up*" what goes on in the classroom so that students have multiple options for taking in information, making sense of ideas, and expressing what they learn.

What is differentiation?

*Differentiation is classroom practice that looks eyeball to eyeball with the reality that kids differ, and the most effective teachers do **whatever it takes** to hook the whole range of kids on learning.*

-Tomlinson (2001)

Differentiation is responsive teaching rather than one-size-fits-all teaching.

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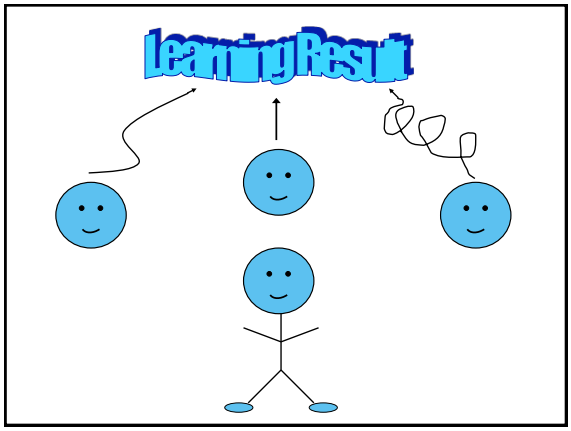

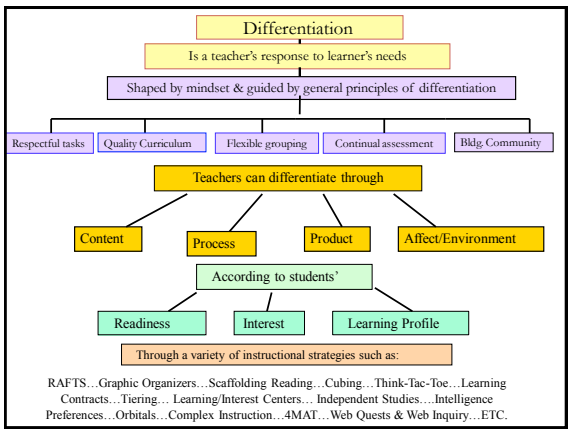

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Differentiation is NOT a set of strategies…
It's a way of thinking about teaching & learning

Strategies are tools to accomplish the goals of DI.
They no more differentiation than a hammer and a saw are the house they help to build.

1 Quality DI

Is predominately proactively planned.

"It means teachers *proactively* plan varied approaches to ***what*** students need to learn, ***how*** they will learn it, and/or how they will ***show what they have learned*** in order to increase the likelihood that each student will learn as much as he or she can, as efficiently as possible."

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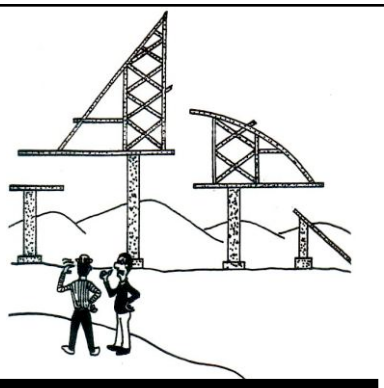

A Continuum of Differentiated Instruction

NO DIFFERENTIATION

Class works as a whole on most materials, exercises, projects.

Group pacing

Group grading standards

Implied or stated philosophy that all of the students need same teaching/learning

Etc.

MICRO DIFFERENTIATION

Adjusting questions in discussion

Encouraging individuals to take an assignment further

Implied variations in grading experiences

Students pick own work groups

If students finish work early, they can read, do puzzles, etc.

Occasional exceptions to standard pacing. May not need to show work, do all math problems.

Occasional adjustments in grading to reflect student effort and/or ability

Etc…

MACRO DIFFERENTIATION

Articulated philosophy of student differences.

Planned assessment/ compacting

Variable pacing is a given

Moving furniture

Planned variation content/input

Planned variation in process/sense-making

Planned variation in product/output

Consistent use of flexible groups

Individual goal setting, assessment (grading)

Grading to reflect individual growth/process

Mentoring

Etc…

	•More reactive •More dependent on student response	•More proactive •More dependent on teacher coaching
C. Tomlinson, 1993	•More fixed •More closed	•More fluid •More open

What Proportion of Your Teachers

No Differentiation **Reactive, Micro Diff.** **Proactive, Macro Diff.**

are at the left, center, or right of the continuum?

What are the implications of your answer for a diverse student population?

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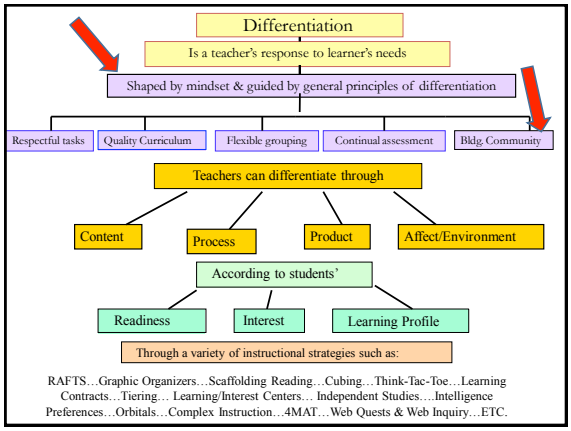

2 Quality DI

Begins with a growth mindset, moves to student-teacher connections, & evolves to community.

Paving the Way

MINDSET ➡ CONNECTIONS ➡ COMMUNITY

to Learning

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RAFT:

ROLE	AUDIENCE	FORMAT	TOPIC
Discouraged Math Student	Teacher	Note Left on Her Desk	Here's why I can't do math
New Teacher	A Colleague	True Confession	When I see that low level class coming…
A Smart Kid	Himself	Droodles	This class is too hard…
A Kid with David Letterman Genes	Audience of other Kids	Top Ten List	How you can tell who the smart kids (or dumb kids) are in school
Professor	Student Teachers	Chart	Watch out for those subliminal messages about ability

EQ: How do perceptions of ability affect teaching and learning?

R.A.F.T.

Role

Audience

Format

Topic

RAFT:

ROLE	AUDIENCE	FORMAT	TOPIC

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Sample RAFT Strips

	Role	Audience	Format	Topic
Language Arts	Semicolon	Middle School	Diary Entry	I Wish You Really Understood Where I Belong
	N.Y. Times	Public	Op Ed piece	How our Language Defines Who We Are
	Huck Finn	Tom Sawyer	Note hidden in a tree knot	A Few Things You Should Know
Science	Rain Drop	Future Droplets	Advice Column	The Beauty of Cycles
	Lung	Owner	Owner's Guide	To Maximize Product Life
	Rain Forest	John Q. Citizen	Paste Up "Ransom" Note	Before It's Too Late
History	Reporter	Public	Obituary	Hitler is Dead
	Martin Luther King	TV audience of 2010	Speech	The Dream Revisited
	Thomas Jefferson	Current Residents of Virginia	Full page newspaper ad	If I could Talk to You Now
Math	Fractions	Whole numbers	Petition	To Be Considered A Part of the Family
	A word problem	Students in your class	Set of directions	How to Get to Know Me

Format based on the work of Doug Buehl cited in Teaching Reading in the Content Areas: If Not Me Then Who?, Billmeyer and Martin, 1998

Sample RAFT Strips

Role	Audience	Format	Topic
Gingerbread Man	Our Class	Oral Response	I never should have listened to the fox
Squanto	Other Native Americans	Pictographs	I can help the inept settlers
Band Member	Other Band Members	Demo Tape	Here's how it goes
Positive Numbers	Negative Numbers	Dating Ad	Opposites Attract
Rational Numbers	Irrational Numbers	Song	Must you go on forever?
Decimals	Fractions	Poem	Don't you get my point?
Perimeter	Area	Diary Entry	How your shape affects me
Monet	Van Gogh	Letter	I wish you'd shed more light on the subject!
Joan of Arc	Self	Soliloquy	To recant, or not to recant; that is the question
Tree	Urban Sprawl	Editorial	My life is worth saving
Thoreau	Public of his day	Letter to the Editor	Why I moved to the pond
Young Chromosome	Experienced Chromosome	Children's Book	What becomes of us in mitosis?
First Grader	Kindergartner	Ad	What's best about 1st grade?

RAFT Strips, cont'd

Role	Audience	Format	Topic
Hal (Henry V, Part 1)	Self	Diary Entry	My friend Falstaff-past, present, future
Magnet	First Graders	Letter	Here's what I'm attracted to…
Transparency	Slide Show	Personal Ad	Spruce up your presentation
LBJ	Viet Nam Vet	Apology Letter	What was I thinking…
Computer	Fifth Graders	Flow Chart	Turning data into a graph with EXCEL
P Waves	S Waves	Dear John Letter	Why we have to stop seeing each other
Carbon Atom	Hydrogen Atom	Personal Ad	Atom seeking atom
A Variable in an Equation	Real Numbers	Ad for the Circus	What is my value in the balancing act?
Return Key	Middle Schoolers	Captain Kirk's Bulletin to his crew	When to beam to another paragraph
Conductor	The Band	Mime	How to play this style of music
Basic Multiplication Fact	Basic Division Fact	Invitation to a family reunion	Here's how we're related

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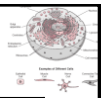
Biology: Cell Structure and Function

Know: Parts of cell & functions of each part
Understand: Cells contain specialized structures necessary for life.
Do: Explain function of each structure and relate to the organism as a whole



Role	Audience	Format	Topic
Talk Show Host	TV Viewers	Interview	So, what makes you tick?
Artist	Art Gallery Owner	Exhibit Poster	What's worth looking for in here?
Head Coach	Team Members	Starting Lineup	Positions and their role in the game plan
Principal	Department Heads	List of Duties	This department is going to work!
Nucleus	Cell	Staff Meeting Top 10 List	What matters most

PLANT RAFT

ROLE	AUDIENCE	FORMAT	TOPIC
Plant Parts	Plant needs	Picture	We're made for each other
Roots	Stem, leaf, flower, seeds	Letter	You'd be lost without me
Flower	Stem, leaf, seeds, roots	Ad	I'm more than just a pretty face

ROLE	AUDIENCE	FORMAT	TOPIC
Seeds	Flower, leaf, stem, roots	Song or poem	Here's where you got your start
Stem	Flower, leaf, seeds, roots	Chart	Why you can't do without me
Leaf	Stem, seeds, flower, roots	3 riddles	Why I'm important to you

*Share RAFTS in mixed groups

*Draw or build something to prove that a plant is well made to have all its needs met

Caroline Cunningham Eidson

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Math RAFT

ROLE	AUDIENCE	FORMAT	TOPIC
Fifth Grader	Fourth Grader	e-mail	One you see how it works, dividing fractions isn't hard.
Numerators	Our Class	Storyboard	Let me show you where we come from and where we go in dividing fractions.
Teacher	Parents	Brochure	Showing your kids how to multiply fractions.
Denominators	Whole numbers	Diagram	Here's how I'm different from you in division.

Please show that you:
Know: numerator, denominator, reciprocal, simplify
Understand: Dividing fractions means multiplying as well.
Do: clearly explain and demonstrate how to set up and divide fractions

The Predictive Power of Mindset

Fixed

- Success comes from being smart
- Genetics, environment determine what we can do
- Some kids are smart—some aren't
- Teachers can't override students' profiles

Growth

- Success comes from effort
- With hard work, most students can do most things
- Teachers can override students' profiles
- A key role of the teacher is to set high goals, provide high support, ensure student focus—to find the thing that makes school work for a student

People CAN Change Their Mindset

Question:

Is a flexible mindset a precursor attending effectively to student differences
or
Is it a goal for professional development related to differentiation?

What are the implications of your answer?

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Paving the Way

MINDSET ➡ CONNECTIONS ➡ COMMUNITY

to Learning

Caring Teachers…

…can help disengaged, passive, confused, or discouraged students become connected to school and to learning. By making their commitments to students and subjects regularly visible, some teacher emerge as stimulating personalities who breathe life into learning. They get respect as role models or mentors. Students develop lasting interests through teachers' enthusiastic representations of subjects, or they develop interest in subjects because teacher show enthusiasm for the students. A few become actual apprentices. Positive relationships with their instructors can motivate students when other incentives fail. Personalization should not be confused with social work; it is directly linked to the promotion of academic learning.

Lessons from Privilege by Arthur G. Powell

(That teachers must connect with all students in an effort to teach them well)
is
a moral imperative
and failure to try constitutes
professional dereliction

Lessons from Privilege
Arthur G. Powell

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Teacher-Student Connections Bridge the Risk of Learning

Paving the Way

MINDSET ➡ CONNECTIONS ➡ COMMUNITY

to Learning

Motivation and Relationships

The new common ground for both cognitive scientists and sociologists concerns *motivation and relationships*, that is, it is only when schooling operates in a way that connects students relationally in a relevant, engaging, and worthwhile experience that substantial learning will occur.

That only a small proportion of any students are so engaged in a measure of the seriousness of the problem.

The New Meaning of Educational Change, Third Edition Michael Fullan

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Movie Time

In this High School Class:

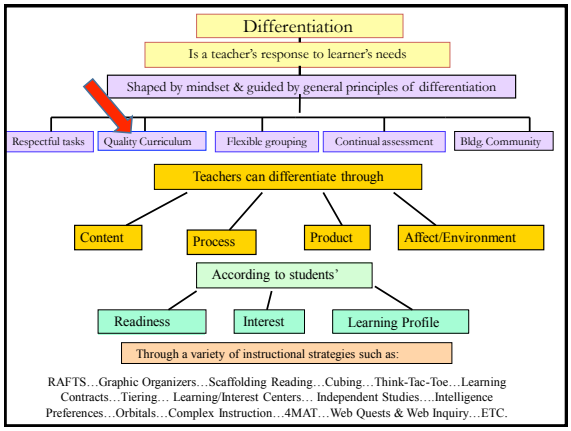
What is the teacher's mindset? Why do you say so?

To what degree do you think this teacher connects with her students? On what evidence do you base your conclusion?

How do you think mindset and decisions about connections Interact?

What role do you believe connecting with students plays in this classroom? What's your evidence for your conclusion?

What do you think would change in this class if your answer were the opposite of what you said? Why do you think so?



3 Quality DI

Is rooted in meaningful curriculum.

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This differentiation thing . . .

"This differentiation thing is really starting to affect the way I think! I was grading research projects this weekend—a project on the American Revolution our department has been assigning for 30+ years – and the kids' work isn't very good.

But then I realized why: It's not addressing anything important! I mean, I want the kids to understand some powerful ideas about revolution and what it does to people and societies. This project doesn't show that they understand anything about that. It's just a bunch of stuff. I hate grading it as much as they hate doing it."

High School History Teacher in Illinois

Planet MI Task

V/L	L/M	M/R	B/K
Write a story about your planet	Make a chart that compares your planet to Earth	Make up a song about your planet	Make up or adapt a game about your planet (Saturn ring-toss, etc.)

Beware of Twinky DI

QUALITY CURRICULUM: THE SHORT VERSION

Engagement + Understanding = Success

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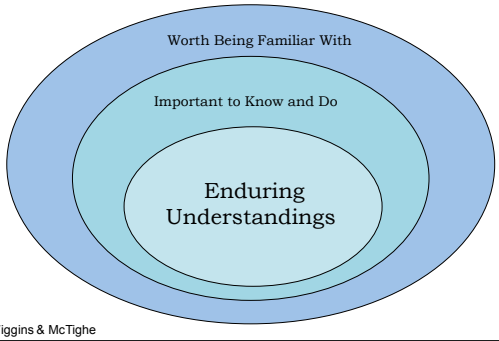
However we conceive it, every lesson plan should be, at its plan at its heart, motivational plan. Young learners are motivated and engaged by a variety of conditions. Among those are:

- novelty
- cultural significance
- personal relevance or passion
- emotional connection
- product focus
- choice
- the potential to make a contribution or link with something greater than self

Tomlinson • 2003 • Fulfilling The Promise...

Teachers Must Distinguish Between:



Wiggins & McTighe

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Planning a Focused Curriculum Means Clarity About What Students Should …

- UNDERSTAND
  - Principles/ generalizations
  - Big ideas of the discipline

KNOW
- Facts
- Vocabulary
- Definitions

- BE ABLE TO DO
  - Processes
  - Skills

A QUESTION FOR YOU…

Could you use these ideas to differentiate instruction for all students?

Know:
Fiction, Change, Reader's Role

Understand:
Fiction is never an answer, always a question.
Fiction is always about change.
In good fiction, the reader asks, "What if I were the character? What would I do?"
In good fiction, the reader asks, "What motivates human beings to do what they do?"
Through good fiction, readers try on lives to see which one fits.
In good fiction, the epiphany is a sudden breakthrough of understanding—of self-awareness.
Good fiction changes readers.

Do:
Use the strategies of a successful reader
Support, illustrate, and/or refute the unit's principles in a blog or vlog

What's the comparison between this as a starting point for differentiation vs. a list of terms, skills, worksheets, or chapter questions?

Principles derived from *Past Perfect, Present Tense* by Richard Peck, New York: Dial, pp. 1-3

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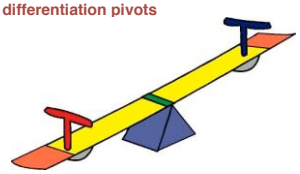
In a Differentiated Classroom…

The teacher may vary the **KNOWS & DOs** with caution and based on evidence that a student needs to learn backwards as well as forward to catch up—or that a student needs to move ahead in order to keep learning.

The **UNDERSTANDS** are the constant fulcrum on which effective differentiation pivots for all students.



New World Explorers

KNOW

- Names of New World Explorers
- Key events of contribution

UNDERSTAND

- Exploration involves
  - risk
  - costs and benefits
  - success and failure

Do

- Use resource materials to illustrate & support ideas

New World Explorers

Using a teacher-provided list of resources and list of product options, show how 2 key explorers took chances, experienced success and failure, and brought about both positive and negative change. Provide proof/evidence.

Using reliable and defensible research, develop a way to show how New World Explorers were paradoxes. Include and go beyond the unit principles

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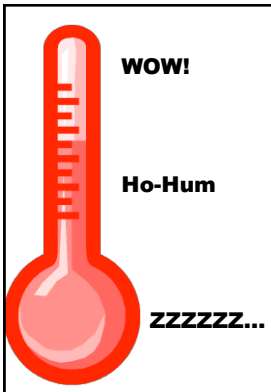


Where is your school or

class on the Meaning Meter?

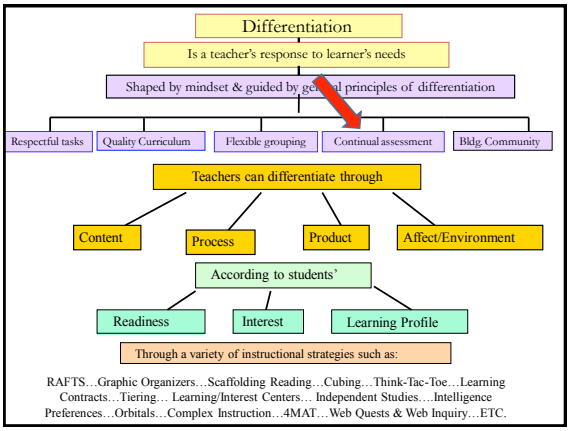
What's your evidence?

Does it matter?

On the Understanding Scale?

Evidence?

Does it matter?



Movie Time….

In Judy's Class, Look For:

Who the classroom "belongs" to
Roles of the students
Roles of the teacher
Ways in which the class does/does not align with your sense of the goals of differentiation
How you think the teacher uses assessment
Your questions!!

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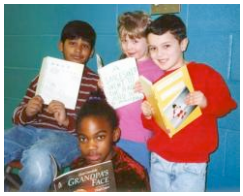
4 Quality DI

Is guided by on-going assessment (for planning and feedback—not grades).



WHAT CAN BE ASSESSED?

READINESS

- Skills
- Content Knowledge
- Concepts/Principles

INTEREST

- Current Interests
- Potential Interests
- Talents/Passions

LEARNING PROFILE

- Areas of Strength and Weakness
- Learning Preferences
- Self Awareness

On-going Assessment: A Diagnostic Continuum

Feedback and Goal Setting

Pre-assessment (Finding Out)	Formative Assessment (Keeping Track & Checking-Up)	Summative Assessment (Making sure)
Pre-test *Graphing for Greatness Inventory* *KWL* *Checklist* *Observation* *Self-evaluation* *Questioning*	*Small group check* *Peer evaluation* *3-minute pause* *Observation* *Talk-around* *Questioning* *Exit Cards* *Portfolio Check* *Quiz* *Journal Entry* *Self-evaluation* *Windshield Check*	*Unit Test* *Performance Task* *Product/Exhibit* *Demonstration* *Portfolio Review*

Remember to check for prerequisite skills

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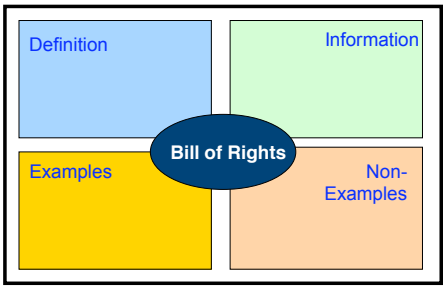
Some Examples of Preassessments

Directions: Complete the chart to show what you know about the Bill of Rights.
Write as much as you can.



Useful for pre-assessment & formative assessment of readiness in many grades & subjects

At My Best…

Thinking about your strengths and best features, please answer the following:

1. A positive thing people say about me is:
2. When I'm feeling great at school, it's probably because:
3. A dream I have for myself is:
4. A thing I like spending time on is:
5. Something that captures my imagination is:
6. The best thing about my family is:
7. My strength as a learner is:
8. What I can contribute to the classroom is:
9. A thing I wish people knew about me is:
10. I'm proud of:

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Strength-Based Assessments

Typical Assessment Info.	Strength-Based Assessment
• Average IQ	• Likes mechanical things
• Average reading achievement	• Reads magazines about motorcycles
• Above average math computation	• Wants to learn more about computers
• Missed 10 days of school this quarter	• Seen as a big brother to neighborhood kids
• 2 in-school suspensions this quarter	• Wants to travel some day
	• Likes to talk about ideas

Based on idea from Sousa & Bender (2008). *How the Brain Influences Behavior: Management Strategies for Every Classroom*. Thousand Oaks, CA: Corwin.

MATH INVENTORY

NAME _____ DATE _____

1. How do you feel about math?
2. Do you think you are good in math? Why do you say that?
3. What are your best areas in math?
4. What are your weakest areas in math?
5. Do you think it is important to be in math? Why do you say that?
6. What do you think are characteristics of students who are good in math?
7. What do you do when you come to a problem in math that you can't figure out?
8. How do you use math outside of class?
9. What do you usually do after school when you get home?
10. Do you most like to do when you have free time? Why?
11. What else should I know about you to teach you effectively this year?

Learning Profile Pre-Assessment

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Learning Profile Pre-Assessment

1. Favorite subjects in school =head color and body color
   - Math-purple
   - Science-red
   - Reading-blue
   - Writing-orange

2. Least favorite subjects in school=hair color
   (you can design fun hair)

3. If you are a boy, use shorts.
   If you are a girl use the pants.
   Make the color pants with your favorite color.

From Mr. Wasserman's 5th grade classroom, Henrico County Schools, VA

Learning Profile Pre-Assessment

4. Strongest multiple intelligence area=shirt color
   - intrapersonal-white
   - Interpersonal-red
   - Musical-blue
   - Kinesthetic-black
   - Logical mathematical-yellow
   - Verbal/linguistic-purple
   - Visual/spatial-orange
   - Naturalist-green

5. Learning preference =shoe color
   - Visual-white
   - Auditory-black
   - Kinesthetic-brown

From Mr. Wasserman's 5th grade classroom, Henrico County Schools, VA

Learning Profile Pre-Assessment

6. If you prefer to work alone on project, put on stripes. If you prefer to work in groups, draw polka dots on your shirts.
7. If you like to be challenged and learn new and difficult things, design a hat for your self.

From Mr. Wasserman's 5th grade classroom Henrico County Schools, VA

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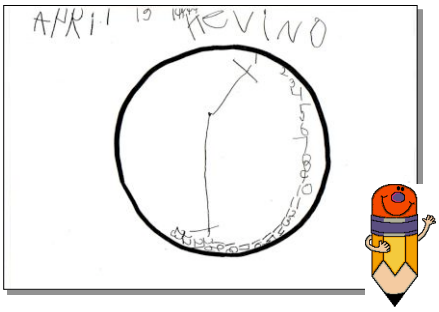
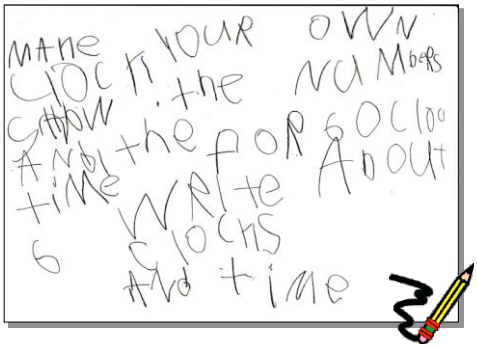
An Example of Pre-assessing Student Readiness in a Primary Classroom





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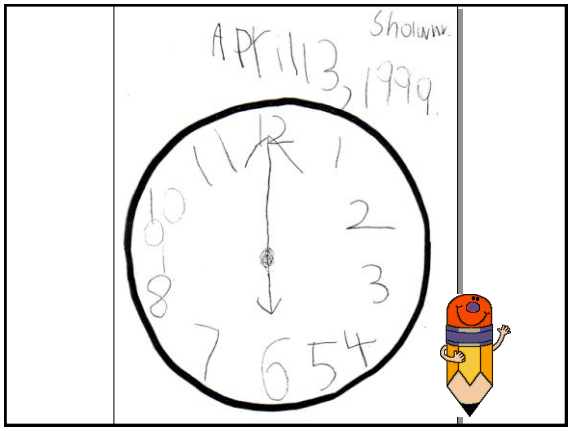

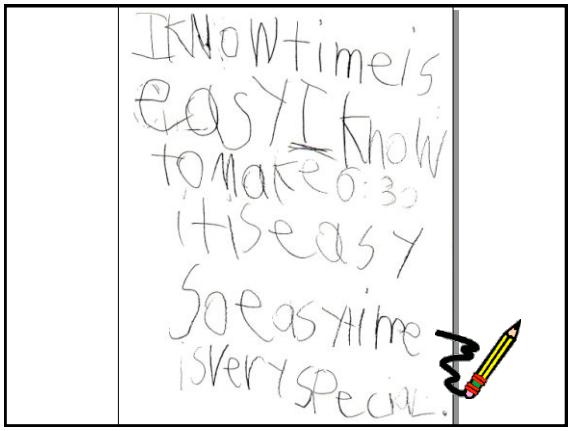

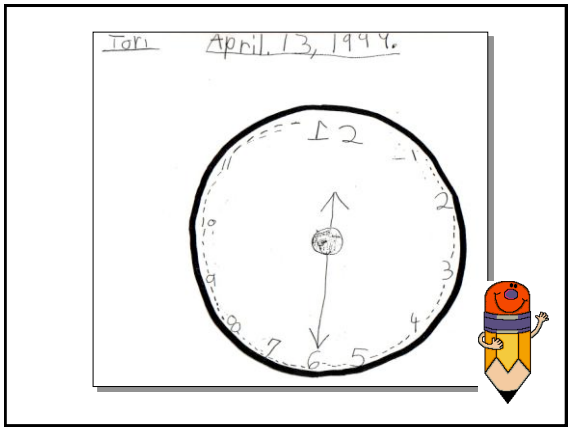

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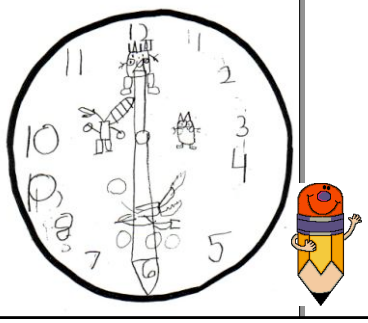
we eat lunch at 11:30
we eat at of S Gal
at. 3:20. we eat
in sal at P:00

Shaun R. April 13, 1999



6 o'clock moms up
50'clock DaDs up
7:15 Shaun R up
9 30 Kayll
8:30 B&B
9 o Clock school
10:30 Snack
11:30 Lanch
4 o'Clock home

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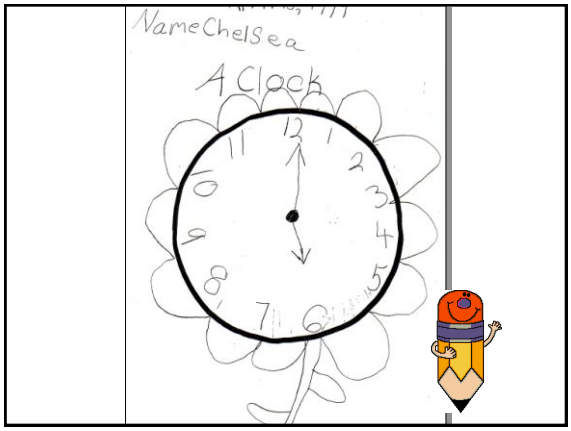

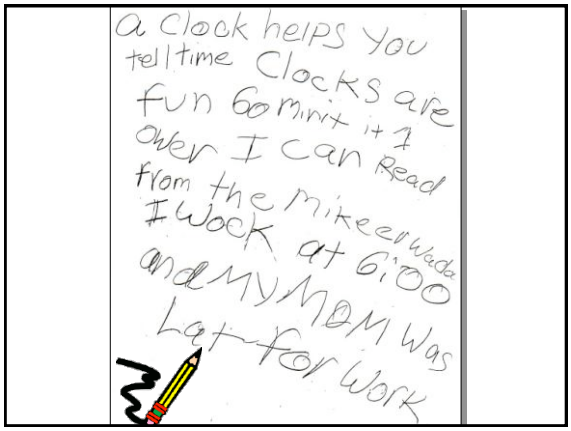

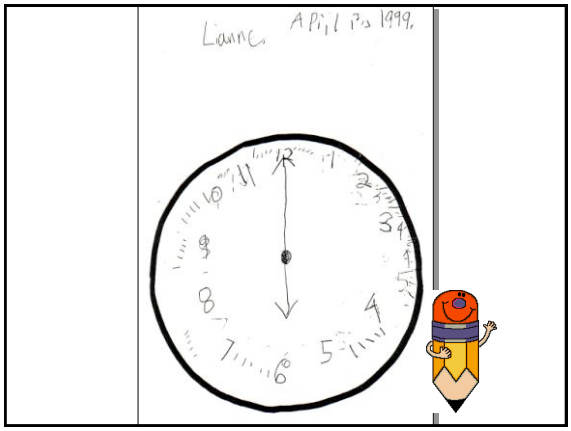

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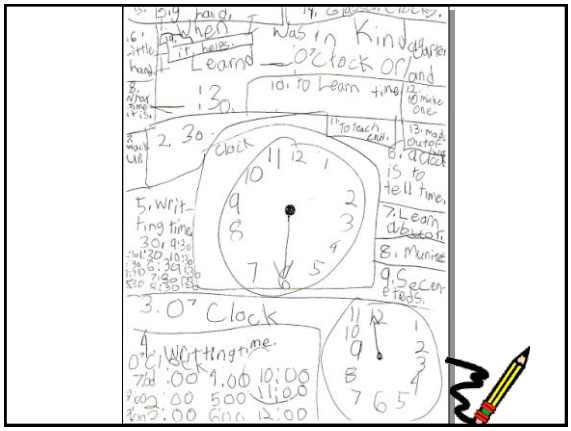

Another Veteran Teacher's Epiphany about Pre-assessment

High School Unit on
The Agricultural Revolution

- *Major Emphasis to Lay Groundwork for Rest of Year*
- *Reading, Lecture, Videos, Journal Entries, Homework, etc.*
- *Three Weeks into the Unit… "So…what's agriculture?"*

Symmetry Pre-Assessment

- Teacher models symmetry/asymmetry once with whole-class using two shapes.
- Teacher conducts individual assessments with a bag of shapes.
- Students tell teacher "yes" or "no" to "Does this have symmetry?" and explain why.

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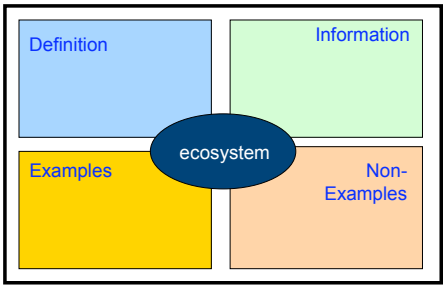
"We [the kindergarten team] were ALL amazed by the results of our symmetry pre-assessment. We had made assumptions about kids that were not true! Vocabulary really played a role in the 'tell me why' part of it. We all ran across more than one kid about whom we made assumptions as to which 'group' they would be in, and we were WRONG. So often, we as teachers group kids on the fly and say, **'I know my students'**. The pre-assessment made us face the fact that **without this [pre-assessment] information we really didn't 'know' our students**."

- Kindergarten Teacher,
Evanston/Skokie District 65

Some Examples of On-Going Assessments

Directions: Complete the chart to show what you know about _____.
Write as much as you can.



Useful for pre-assessment & formative assessment of readiness in many grades & subjects

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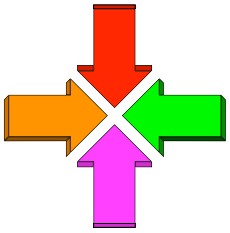
EXIT CARDS

On your exit card---

Explain the difference between simile and metaphor. Give some examples of each as part of your explanation.



on-going assessment of readiness

EXIT CARDS - Learning Preferences

We used the following learning strategies in this lesson:

- 3 minute pause
- T-P-S
- Visualizing

What learning strategy or strategies seemed to work best for you? Why?

on-going assessment of learning profile

3-2-1 Card

Name:

- **3** ***things I learned*** from the book talk…
- **2** ***questions*** I still have about the book…
- **1** way the book is like my world ….

on-going assessment of readiness

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1-2-3 Summarizer

After reading over my rough draft---

1 thing I *really like* about my first draft

2 resources I can use to help improve my draft.

3 revisions I can make to improve my draft.

on-going assessment of to help student self-awareness and planning

An example of informal on-going or formative assessment of readiness

Windshield Check

- CLEAR – "I get it!"
- BUGS – "I get it for the most part, but I still have a few questions."
- MUD – "I still don't get it."

Or: Dip Stick—Full, Half Full, Need Oil

Weather Report—Clear Skies, Partly Cloudy, Fog & Smog

Teaching in the Dark

is Questionable Business

Hilda Taba

Trying to differentiate in the dark is delusional !!!

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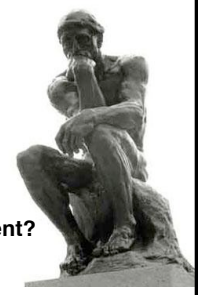
What differences do you see in more traditional or typical ways of thinking about assessment and the way Differentiated Instruction seems to think about assessment?



Assessment & Differentiation...

- It's about guiding students, not judging them.
- It's about informing instruction, not filling grade books.
- It's about before, during, & after—not just after.
- It's about teaching for success—not gotcha teaching.

What's Different?

Note 4 ways that assessment in differentiation differs from more typical thinking about assessment.

"Differentiation is making sure that the right students get the right learning tasks at the right time. Once you have a sense of what each student holds as 'given' or 'known' and what he or she needs in order to learn, differentiation is no longer an option; it is an obvious response."

Assessment as Learning: Using Classroom Assessment to Maximize Student Learning
Lorna M. Earl
Corwin Press, Inc. – 2003 – pp. 86-87

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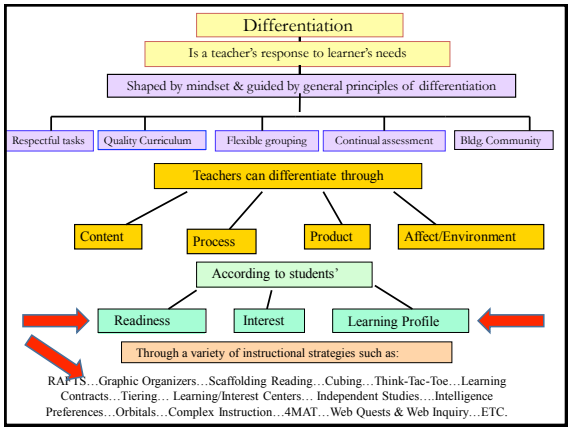
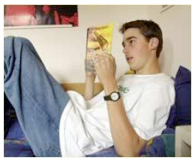
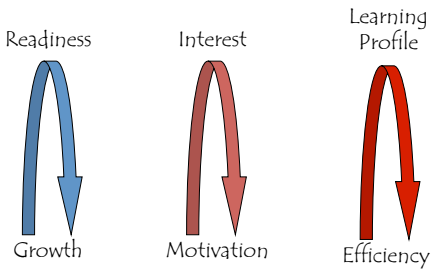


5 Quality DI

Addresses student readiness, interest, and learning profile.



What's the Point?



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Learner Cards

Jamala Fisher

3

Front

Rdg Level
+321 – 123-

Sch Affil
+ -

Int
Soccer
Mysteries
Video Games

LP
Q/N
V/A/K
G/S
A/P/C
P/W

S/P
ELL

Back

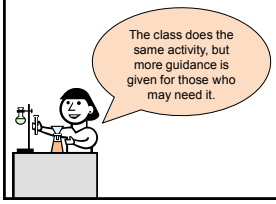
Nanci Smith '03

Sedimentary	Igneous	Metamorphic

Rock Log

Sort your samples. Draw each sample in the correct column. Write a description that tells color, texture and other characteristics about the rock.

Sedimentary	Igneous	Metamorphic
Look at Sample #___	Look at Sample #___	Look at Sample #___
You may see small particles of rock and other materials. The particles may look rounded. You may see layers in some rocks.	you may see large crystals in some of these rocks. Others will not have crystals, but you will see air holes. Some may look like glass. There are no layers.	These rocks may have crystals or layers. They are formed from other rocks that have been changed by heat and pressure



Created by Meri-Lyn Stark
Elementary Science Coordinator
Park City School District

Reading Homework Coupon	Reading Homework Coupon
Name: Date: ❑ Please ask your child to tell you the story in the book he or she brought home today by looking at the pictures.	Name: Date: ❑ Please echo read the book your child brought home. (Echo reading means you read a line, then your child reads or echoes the same line.) ❑ Ask your child to show you some words in the story he or she recognizes.
Reading Homework Coupon	**Reading Homework Coupon**
Name: Date: ❑ Ask your child to read with expression as if he or she were reading to entertain someone, ❑ Ask your child to give you several reasons why he or she likes (or dislikes) the book. ❑ Have your child tell you what feelings the character in the book has. Ask for evidence from the book.	Name: Date: ❑ Ask your child to read with a different voice for each character ❑ After the reading, ask how your child decided on how his/her voice could help you know the various characters better. ❑ Ask your child to tell you which character would be most fun to spend time with. Ask for reasons for his/her choice.

Adapted from Managing A Diverse Classroom by Carol Cummings - by Tomlinson '02

DOUBLE ENTRY JOURNAL
(Basic)

As you Read, Please Note:	After you Read, Please Explain:
• Key phrases • Important words • Main ideas • Puzzling passages • Summaries • Powerful passages • Key parts • Important graphics • Etc.	• How to use ideas • Why an idea is important • Questions • Meaning of key words, passages • Predictions • Reactions • Comments on style • Interpretation of graphics • Etc.

DOUBLE ENTRY JOURNAL
(Advanced)

NOTE	EXPLAIN	ANOTHER VOICE
• Key passages • Key vocabulary • Organizing concepts • Key principles • Key patterns • Links between text & graphics	➢ Why ideas are important ➢ Author's development of elements ➢ How parts and whole relate ➢ Assumptions of author ➢ Key questions	• Teacher • Author • Expert in field • Character • Satirist • Political cartoonist • Etc.

A Simple & Important Example

Varied Homework

Why'd we ever think the same homework for everyone made sense anyhow??

Sure you can check homework when kids do varied tasks!!

Homework Checkers

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Homework Checkers

Background:

This is a process for checking multiple homework assignments simultaneously in a classroom so that the teacher feels free to differentiate homework as necessary to address particular student learning needs.

Steps:

1. The teacher checks to make sure each student has completed assigned homework
2. Students who have not completed the assignment work in a designated area of the room to complete the assignment (teacher floats to provide guidance/feedback
3. Students who completed the HW work in groups of 4 to check all 4 sets for agreement/disagreement
4. All students mark each answer for agreement/disagreement as well as explanations of why an answer is wrong and how to make it right
5. Students sign indicating agreement, staple set of 4 together, turn in
6. Teacher spot checks, "grades" one per set

Book Match

Learning Objective

Mastering basic concepts of print (word matching, word recognition, and identifying word boundaries)

Materials

- familiar children's books
- sentence strips
- scissors
- large resealable plastic bags
- tagboard
- plastic bin
- pocket chart

Presentation and Storage

Copy the text of a familiar book on sentence strips to provide additional reading opportunities without the support of illustrations. (Taking away the illustrations does not make a reading experience more valid, it just makes it different!) Cut the sentences into words, color-code each set, and store sets in resealable bags. (Color-coding makes it easier to return errant cards to their proper bags.) Put in the bag one copy of the book and a piece of tagboard labeled with the book title. Stand the bags upright in a plastic bin. By the end of the year, you may have 20–30 book bags, and you will definitely want them to last!

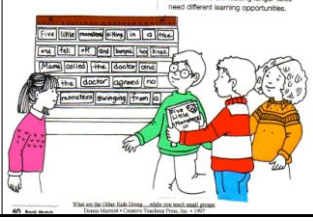
Process

Students arrange the words in a pocket chart using the book as a model. Once the story has been reconstructed, students read it to other students or to parent volunteers. This is one of the few learning centers that does not yield a product of student learning. You may ask students to leave the cards in place for you to check at a later time. However, you may prefer to have students pack up the cards as soon as they finish to keep the pocket chart free for other children. Once the book is read and reassembled properly, the student's learning goal has been reached.

Helpful Hints

Have students prepare sentence strips based on books from their Book Clubs. This will save you time and reinforce reading and writing. You may also wish to present text in this format when preparing to do a story innovation or copy-change.

This learning activity is most appropriate for emergent and very early readers. Once students are reading books that are 16 or more pages, they may have outgrown this activity. Also, if you have ever tried to reconstruct a long book one word at a time, you will probably agree that it is a very tedious process. Students who are reading longer texts need different learning opportunities.



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Calling on Students in a High School Class

Bag of Names

Volunteers

New Voices

Electricity

Description	Kinds of Electricity
Electricity is one kind of energy .	There are two kinds of electricity, static and current. Static electricity is on electric charge that does not move. Current electricity is the movement of electrons.
Electric Circuits	**Producing Electricity**
There are two kinds of electric circuits A series circuit is one in which current can follow only one path A parallel circuit is one in which current can follow more than one path.	A generator is a machine that changes mechanical energy into electrical energy. A dry cell uses a chemical paste, carbon rod, and. zinc to produce a flow of electrons. A wet cell uses acid and water, which reacts with metal plates, to produce a flow of electrons.
Using Electricity	**Measuring Electricity**
Electricity is an important source of light and heat. Electrical energy can be changed to mechanical energy. Fuses and circuit breakers are safety devices designed to help use electricity safely.	The amount of electricity used is measured in kilowatt-hours.

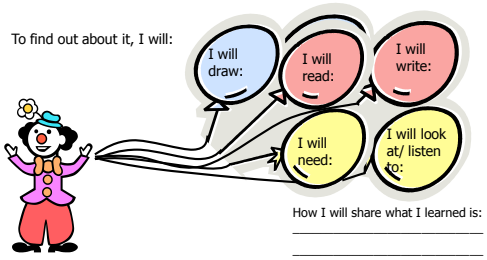
Note: Basic format Perceptions and Strategies," by M.W.Olson and T.C. Gee, 1991. *The Reading Teacher, 45(4), 298-307 Copyright 1991 by the International Reading Association* *Teaching Reading in Science* by Barton and Jordan

Name: _____

I WANT TO KNOW

My Question or Topic is: _____

To find out about it, I will:



How I will share what I learned is:

_____

_____

_____

I will finish by: _____

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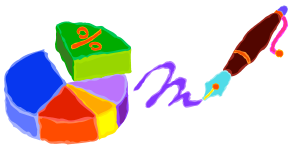
Using a Strength to Support a Weakness
One Example

100% Me poems

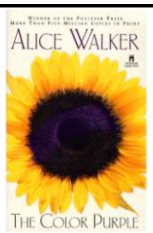
I'm 9% math
10% soccer
4% science
2% clean locker
I'm 21% wilderness
6% blue
I'm 6% braces
And 2% shoe
I'm 33% smiles 3% brown hair
4% pineapple
I'm very rare!

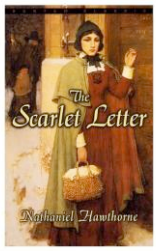
Kelsey—Grade 6



In *Practical Poetry: A Non-Standard Approach to Meeting Content-Area Standards*
By Sara Holbrook (2005), Portsmouth, NH: Heinemann, p. 79

The Color Purple





&

The Scarlet Letter

East Chapel Hill High, Chapel Hill, NC

Math Ticket

Graphics	Problem of the Day	Computer
Tangram Ex (p.14#1) Tangram Ex (p.11,#9) Geoboard Pentagon Geoboard Hexagon	Complete the odd # problems from the POD board.	Complete the blue task cards
Math Writing	**Math with Legs**	**Teacher Feature**
•Explain in clear step by step way how you: *Solved your problem of the day or solved your Tangram/Geoboard challenge *Use pictures and words to teach someone how to do one of your five math tasks	Develop a real problem someone might have which graphing might help them. Explain and model how it the problem & solution would work.	When you are called

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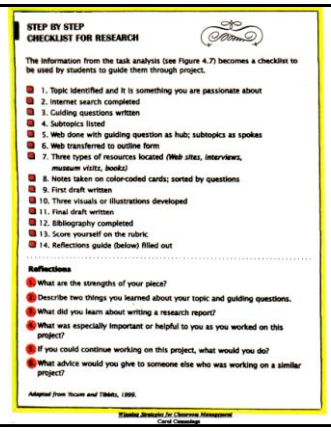
Window Forecasting

Learning Profile Science Activity

Meteorologist:

You are a meteorologist working for Channel 29 News. The show will "air" in 10 minutes with the weekend's forecast, but all the equipment is failing. Look out your "windows" and use the clouds to predict the weather forecast for the local community. You can either write your script for the news show explaining your prediction and your reasons for the prediction, create a poster or prop for the news show that shows the audience what you think the weather will do and why, or role-play the part of the meteorologist and verbally present your forecast predictions to the audience.



STEP BY STEP CHECKLIST FOR RESEARCH

The information from the task analysis (see Figure 4.7) becomes a checklist to be used by students to guide them through project.

- 1. Topic identified and it is something you are passionate about
- 2. Internet search completed
- 3. Guiding questions written
- 4. Subtopics listed
- 5. Web done with guiding question as hub; subtopics as spokes
- 6. Web transferred to outline form
- 7. Three types of resources located (*Web sites, interviews, museum visits, books*)
- 8. Notes taken on color-coded cards; sorted by questions
- 9. First draft written
- 10. Three visuals or illustrations developed
- 11. Final draft written
- 12. Bibliography completed
- 13. Score yourself on the rubric
- 14. Reflections guide (below) filled out

Reflections

1. What are the strengths of your piece?
2. Describe two things you learned about your topic and guiding questions.
3. What did you learn about writing a research report?
4. What was especially important or helpful to you as you worked on this project?
5. If you could continue working on this project, what would you do?
6. What advice would you give to someone else who was working on a similar project?

Adapted from Tocum and Tibbits, 1999.

Winning Strategies for Classroom Management
Carol Cummings

Copyright Carol Tomlinson 2009

Varied Journal Prompts

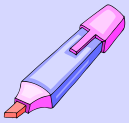
(The 1st three examples used annotated storyboards)

A. Why did Max go to visit the wild things? Do you think it was a good idea or a bad idea? Why do you say so?
B. If you were Max's mom or dad, write about what you would think when he went to his room, when he went to where the wild things are, and when he decided to come home.
C. Max sometimes talks to himself. Tell us what he says when he goes to his room, as he goes through his visit with the wild things, when he decides to come home, and when he returns to his room. What do he and his parents say the next morning?
D. What does it really mean to go where the wild things are? Write a story about a time when that happened to you or to someone you know. Tell enough so we can see how the stories are alike and different.

Primary Reading Comprehension

Highlighted Texts

About 15% of a chapter—e.g.
- **Introduction**
- **Conclusion**
- **Critical passages**
- **Key graphics**



Intended for English language learners
- **Also helpful for students:**
  - **with ADHD**
  - **with learning disabilities**
  - **who have difficulty making meaning**
  - **who are weak readers**

Word Jars

Janet Allen (1999) *Words, Words, Words.* • Stenhouse • p. 146

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Movie Time….

In Monica's Classroom, Look For:

Comfort with students
Nature of the learning environment
Clarity of learning goals
The assessment/instruction connection
Ways in which the teacher addresses learning profile (as well as readiness & interest)
Also, note your own questions

Can You See It??

Sara Kajder used a wide range of approaches to engage adolescents turned off to reading.

In using the ideas, she engaged their strengths and interests, kept them thinking, and proved to them that they were indeed thoughtful and capable readers.

There is also a high degree of relevance involved in the strategies because they tap into literacies central in the students' worlds.

It's likely that there is often a link between a student's interests and/or learning preferences and what that student finds to be relevant.

Kajder, S. (2006). *Bringing the outside in: Visual ways to engage reluctant readers.* Portland, ME: Stenhouse.

Can You See It??

In the beginning:

From no response

to Reading as tearing things apart,

Destructive,

Overwhelming

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Can You See It??

Iconic representations of self as reader
Graphic notes (storyboards or comics w/ summaries)
Visual read alouds/think alouds
Digital word walls
Image flash cards with digital word collections (including international contributions of images from epals.com)
Digital essays
On-line logs with images, video, and sound to interpret and communicate ideas about text (blogs, vlogs)
On-line yearbook of learners' journeys

Later in the Year…

Can You See It??

"I don't know what it is about this assignment but I have never taken so much time to read something before. I think maybe it's because I'm taking the time to let the picture unfold in my head."

"Part of me thinks I was tricked a little into this, but in watching my video, I see myself as a reader. It isn't pretty, but it's there in ways that I don't see it if I just read through these notes. Don't know what's up with that, but I'm going to keep coming so I can figure it out."

"It's the author's words working with my pictures and my words. I understand in a completely different way."

"What I think about reading is like the pencil sketch under a painting. What I hear and see when I read provides some of the layers. And I'm adding layers all the time when I think about something new, or something happens that changes the me that is doing the reading. To me, this is real reading, and I finally see what it looks like."

FRONT LOADING VOCABULARY

WHAT WORDS SHOULD YOU FRONT LOAD?

Ones that are essential for understanding how the information makes sense,

Ones you know the students will struggle with,

Ones that lack adequate support in the text for making meaning.

HOW MANY WORDS SHOULD YOU TEACH UP FRONT?

About 3-4 for the lower grades
About 5-6 for the upper grades

Teaching Reading in Social Studies, Science & Math by Laura Robb (2003) Scholastic, p. 197

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When You Front Load Vocabulary Be Sure:

Students have a context for the word

Or that you establish a context

To show students how to use root words to make meaning

You maintain a focus on the words throughout the chapter

That you hold up the words in subsequent chapters as prior knowledge

Differentiation By Interest

Social Studies

Mrs. Schlim and her students were studying the Civil War. During the unit, they did many things -- read and discussed the text, looked at many primary documents (including letters from soldiers, diaries of slaves), had guest speakers, visited a battlefield, etc.

As the unit began, Mrs. Schlim reminded her students that they would be looking for examples and principles related to culture, conflict change and interdependence.

Differentiation By Interest

Social Studies (cont'd)

She asked her students to list topics they liked thinking and learning about in their own world. Among those listed were:

music reading food books

sports/recreation transportation travel

mysteries people heroes/ villains

cartoons families medicine

teenagers humor clothing

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Differentiation By Interest

Social Studies (cont'd)

Students had as supports for their work:

- *a planning calendar*
- *criteria for quality*
- *check-in dates*
- *options for expressing what they learned*
- *data gathering matrix (optional)*
- *class discussions on findings, progress, snags*
- *mini-lessons on research (optional)*

6 Quality DI

Teaches up!

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A NON-NEGOTIABLE OF DI

Our goal should always be to create the richest, highest quality curriculum we know how to create…

Then, differentiate to enable most students to succeed with it.

Differentiation should always be about lifting up---never about watering down!!

TEACHING UP!!

Defensible Differentiation:

- Always • Teaches Up
- Never • Waters down

What Does it Mean to Teach Up?

TASKS:

Clear KUDs
Require careful thought
Focus on understanding
Problems to solve/Issues to address
Use key knowledge & skills to explore, or extend understandings
Authentic
Require support, explanation, application, evaluation, transfer
Criteria at or above "meets expectations"
Require metacognition, reflection, planning, evaluation

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Alien invasion

1st Year Language Interaction

Provide each student with a sheet of "aliens" with varied numbers of arms, legs, eyes, noses, mouths, and ears.

Target Group

Student A selects on of the aliens. Student B asks questions in an attempt to figure out which Alien student A selected. Student A answers the questions in complete sentences. All questions must be "yes" "no" questions having to do with the aliens' features. Students then switch roles.

Advanced Group

Student B also asks questions about why the alien is formed as it is. Student A makes up responses. In the end, the students write a descriptive statement about the structure and function of the alien. Students then switch roles.

Alien invasion

1st Year Language Interaction

Struggling Group

If there are students who cannot succeed with the Target Activity, the teacher can provide one of the following:

1. A list of possible questions in the language
2. A list of helpful vocabulary
3. A brief period of teacher coaching to help students develop a model for the task

Following this initial activity, students design, describe and name their own alien.

These are displayed in the classroom and the whole class engages in a questioning activity to determine who created each alien.

(For example: Does William's alien have four ears? Does William's alien have long legs?)

Based on a differentiated Spanish I activity developed by Ellie Gallagher, Park City Utah and Enhancing Foreign Language Instruction in Your Classroom by Barbara Snyder

"Teaching up" is strongly connected to both teacher & student "mindset…"

How does that work?

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7 Quality DI

Requires effective, flexible classroom management.

Where can teachers be flexible...

...to ensure that they connect essential content...

...with *each* student in their class(es)?

What specific suggestions would you give teachers?

How Can We Be More Flexible With:

Teaching	Time	Materials & Tasks	Groups	Space
Provide notes for students who struggle with taking them	Allow students to move ahead in texts & with skills	Provide reading & web material at different levels	Meet with students in small groups to re-teach or extend	Provide space for peer collaboration
Stop often for student sharing and questions	Provide 2nd opportunities for mastery	Use contracts, tiering, mini-workshops, etc.	Use heterogeneous review groups	Use cue walls, help boards, word walls
Use past student work as models	Allow drafts to be turned in early for teacher review	Use computer programs for review & extension	Use homogeneous work groups (esp. for adv. learners)	Provide space for learning &/or enrichment centers

To Address Readiness

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How Can We Be More Flexible With:

Teaching	Time	Materials & Tasks	Groups	Space
Attach key understandings to student interests	Use some time in each unit for relevance	Use interest-based materials	Use interest-alike groups	Devote some space in the room to student inquiry
Share your interests & how key ideas & skills relate to them	Make time for student-generated inquiry (e.g. Orbitals)	Focus RAFTs journal prompts, perf. tasks, etc. on interests	Use student expert-groups	Make space available for student collaboration
Invite students to co-teach on interests	Conclude lessons with "so what" time	Use biography & autobiography	Use Jigsaw groups	Use interest centers or boards

To Address Interests

How Can We Be More Flexible With:

Teaching	Time	Materials & Tasks	Groups	Space
Present in multiple modes (visual, auditory, demonstration)	Provide time to work alone and time to work with peers	Use Analytical, Creative, & Practical Applications	Use Complex Instruction groups	Have quiet space available
Give students advance signals/cues to prompt thinking	Honor student pace of working when possible	Provide both competition & collaboration	Use similar & mixed learning profile groups as part of flexible grouping	Ensure places to work without visual distractions
Use examples related to both genders & many cultures	Honor cultural perspectives on time	Help students use auditory vs. visual preferences	Use synthesis groups to express ideas in varied modes	Use an "independent study area"

To Address Learning Profile

Personal Agenda*

Agenda for_____

Starting date:_____

Task

____ Complete a Hypercard Stack showing how a volcano works

____ Read your personal choice biography

____ Practice adding fractions by completing number problems and word problems on pages 101-106 of the workbook

____ Complete research for an article on why volcanoes are where they are for our science newspaper. Write the article and have the editor review it with you

____ Complete at least 2 spelling cycles.

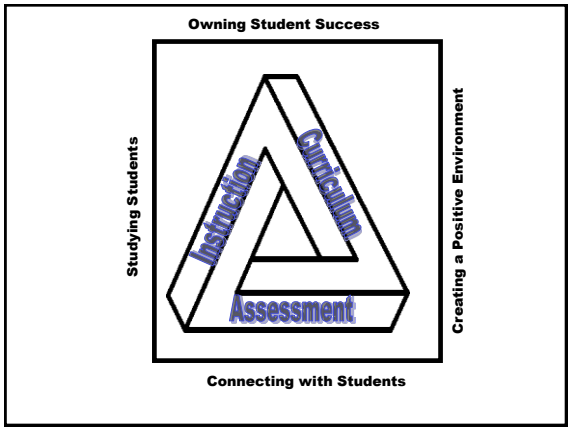
Special Instructions

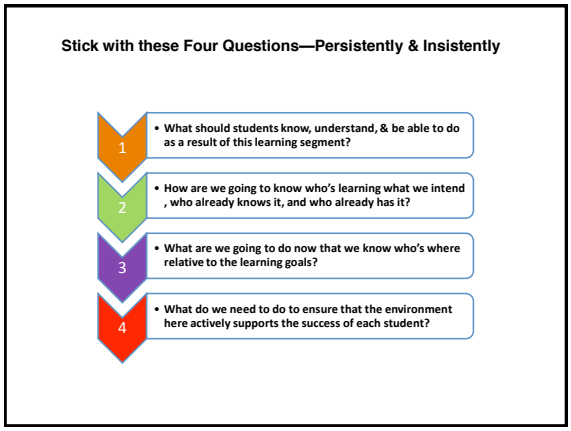
- Be sure to show scientific accuracy
- Keep a reading log of your progress
- Come to the teacher or a friend for help if you get stuck
- Watch your punctuation and spelling! Don't let them hurt your great skill at organizing ideas.

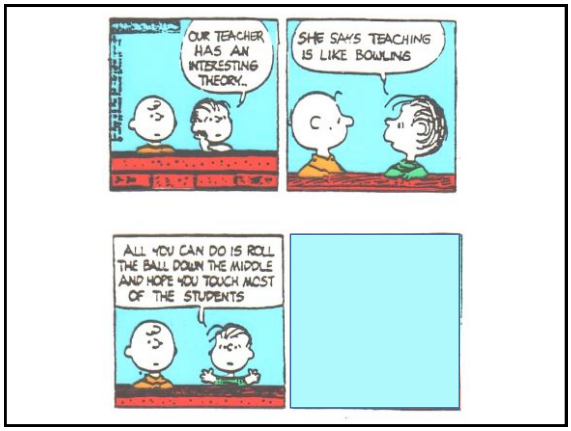
*Remember to complete your daily planning log

*Remember I'll call you for conferences and instructions sometimes

Tomlinson '98







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Regularly use 3-5 low prep strategies during year 1.
Also create & use 1 high prep strategy per marking period--& save them.

During year 2, keep the low prep strategies from year 1 and add 3-4 more.
Use the 4 high prep strategies from year 1 and add 1 more during each marking period of year 2.

Follow the same pattern for each of the next three years.
At the end of 5 years, you'd have 20 high prep strategies ready to go and dozens of low prep strategies with which you were comfortable

That schedule allows steady change as well as comfort and confidenc the change—and with a reasonable expenditure of time.

- In one subject---
  - In the subject in which your students seem to vary mos
  - In the subject with which you are most comfortable
- In one class—
  - In the class that seems to need it most
  - In the class with which you are most comfortable
- With one element—
  - products, journal prompts, assistance with reading,

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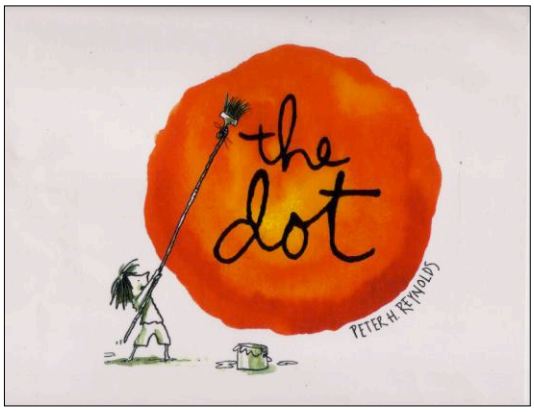
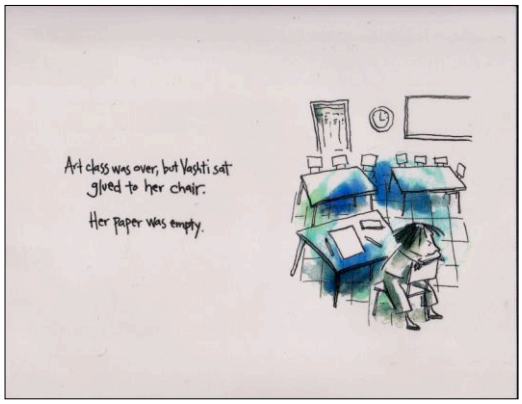
EXIT CARD

3 ideas you've been thinking about today

2 topics/issues you'd like to see addressed tomorrow

1 thing from today you can put to use





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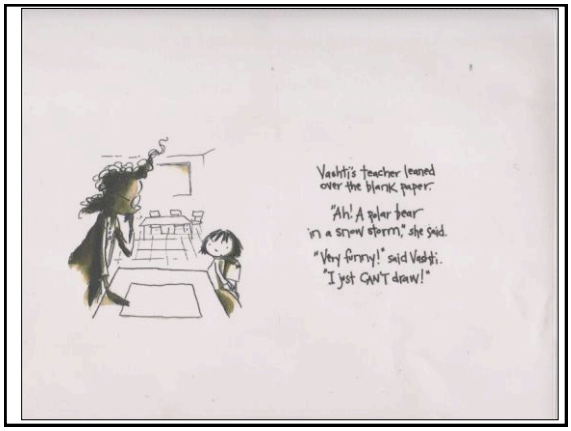

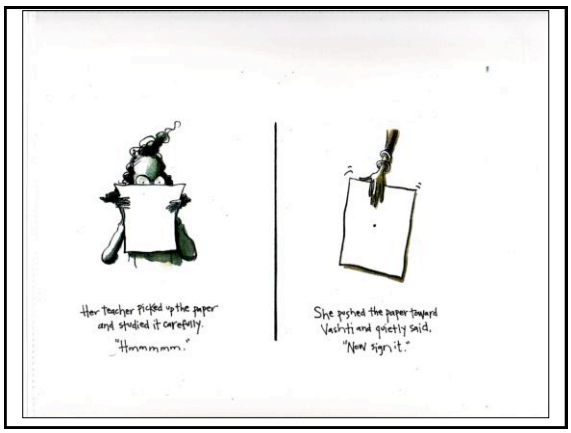

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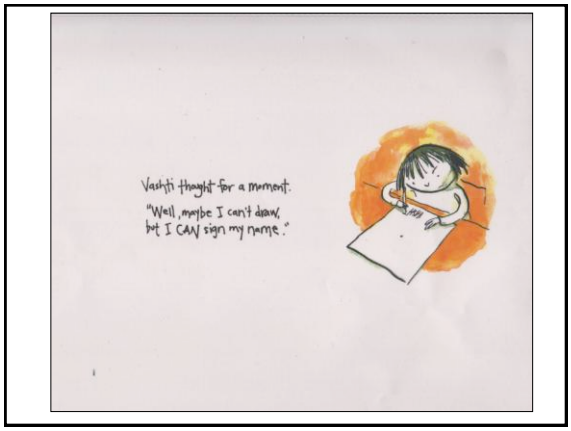

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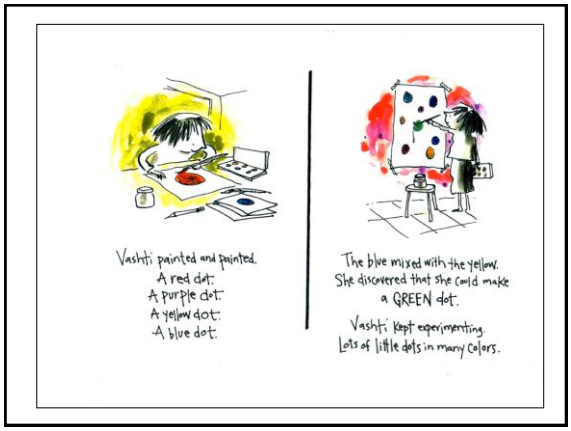

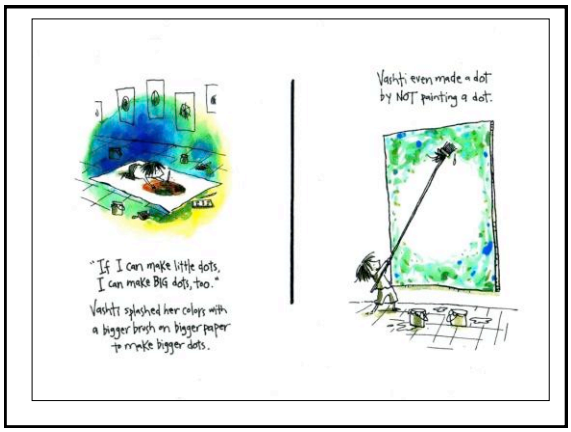

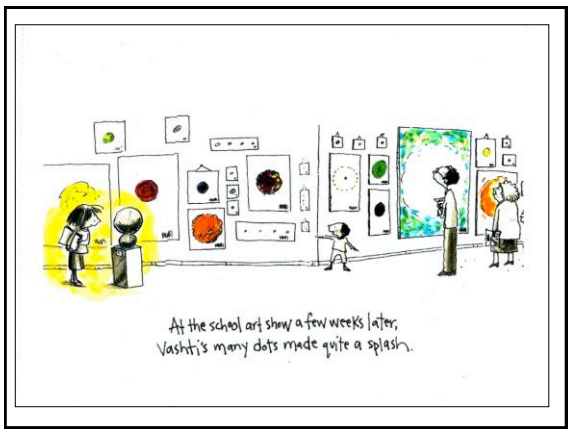

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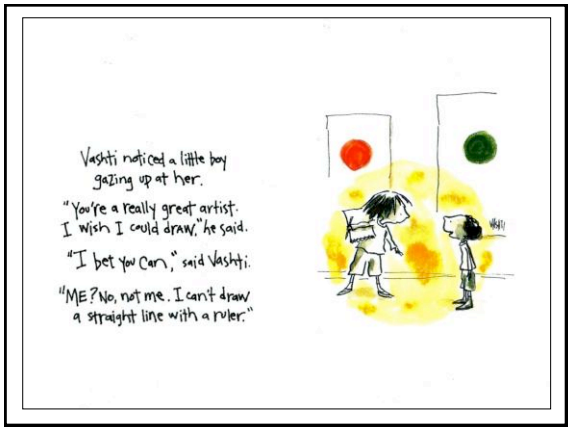

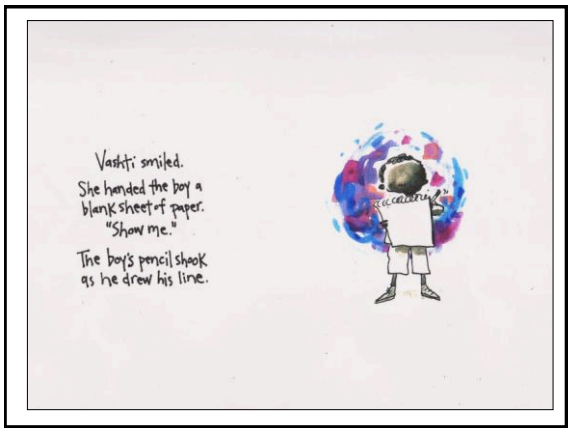

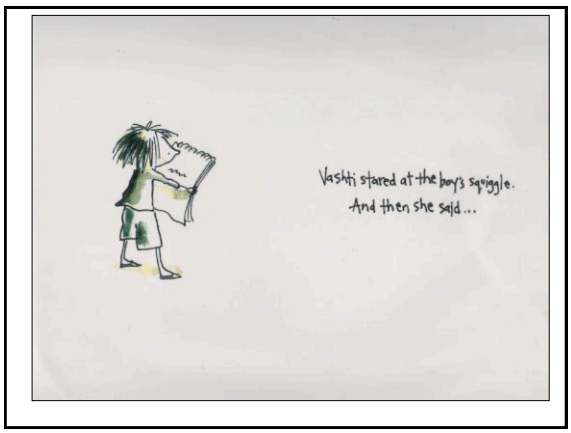

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